





IP Database Announcement & Non-GMO Soybean Update

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A close-up photograph of several yellow soybeans, showing their characteristic oval shape and the small indentation where the hilum is located. The beans are piled together, creating a textured background.

U.S. SOY for a growing world



Soyfood bean Database

Soyfood bean database

- Drawn from samples provided by U.S. soy food stakeholders (exporters, farmers, researchers, genetics companies).
- Include information pertaining to;
 - Production year, commercial variety name, GM/non-GMO/Organic, maturity group, state or area grown, soybean seed type (tofu, soymilk, natto, miso, indeterminate, etc.), photo of the sample.
- Expected to test;
 - hilum color, seed size, protein, oil, sucrose, oligosaccharides, total free sugars, amino acid profile, total carbohydrates, fatty acid profile, total isoflavones.
 - Soymilk and tofu yields

Soyfood bean database timeline

- Developed by soyfood stakeholders from Jan-Aug 2020
- Sample collection and analysis is being provided by Dr. Seth Naeve, and Dr. Jill Miller at the University of MN. Additional analysis (isoflavones, soymilk/tofu) is being provided by NCI.
- Database is set to go live early in 2021, on USSoy.org



A close-up photograph of several green, fuzzy soybean pods hanging from a stem. The pods are covered in fine, light-colored hairs. The background is a blurred green, suggesting foliage.

Soyfood Acreage Study



Non-GMO Food-grade Soybeans Quantification Study September 2020





Non-GMO Food-
grade Soybeans
Quantification
Study
September 2020

Background & Methodology



Information for this study was collected between August 2020 and September 2020 from the following sources:

- **101 non-GMO soybean producers** (via phone interviews and online surveys)
- **22 companies that purchase or export non-GMO food-grade soybeans** (via online surveys)
- **3 state soybean associations** (via phone interviews). First year surveying this group.
- **Secondary sources** including the United States Department of Agriculture (USDA) and its various agencies.

In aggregate, information collected from different participants is meant to be complimentary and provide USSEC with a complete description of IP non-GMO food-grade soybean production in the U.S as well an assessment of production trends that may impact non-GMO food-grade soybean production.

Secondary data sources compiled from the *USDA National Agricultural Statistics Service (USDA NASS)* reports, including the most recent *Crop Production Reports*, *Economic Research Services (ERS)* data and *Foreign Trade Statistics*. The following secondary information is assumed to be accurate and is used in this study as known quantities:

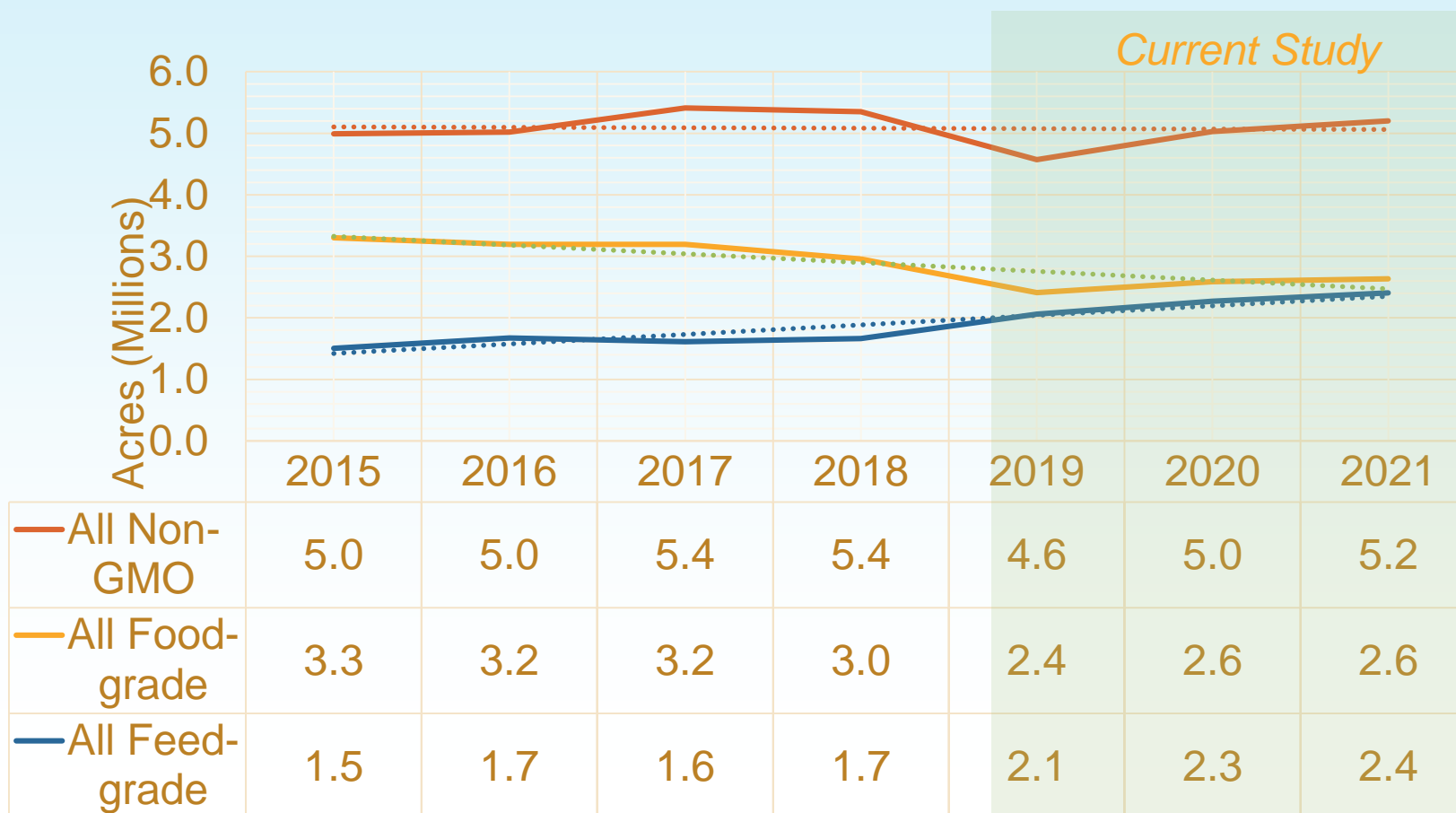
	2019	2020	2021
Total U.S. Soybean acres (millions) ¹	76.1	83.8	86.7
U.S. Non-GM Soybean acres (millions) ¹	4.6	5.0	5.2
Biotech/specialty soybeans acres (millions) ¹	71.5	78.8	81.5
Average GM soybean yield (bushels/acre) ¹	47.4	51.9	52.6*
Estimated metric tons of U.S. soybeans exported (millions) ²	45.7	57.8	57.9**
Estimated bushels of U.S. soybeans exported (millions) ²	1,680.0	2,125.0	2,126.2

¹ Source: USDA NASS, 6/30/2020.
 * Projection based on grower data in current study.

² USDA World Agricultural Supply and Demand Estimates (WASDE), September 2020; ISSN: 1554-9089.
 Outlook for U.S. Agricultural Trade, ERS, August 26, 2020, 98891, Economic Research Service and Foreign Agricultural Service

Estimate of Non-GMO Soybean Acres in the U.S.

- U.S. growers produced about 2.6 million non-GMO food-grade soybeans in 2020, up seven percent from 2019.



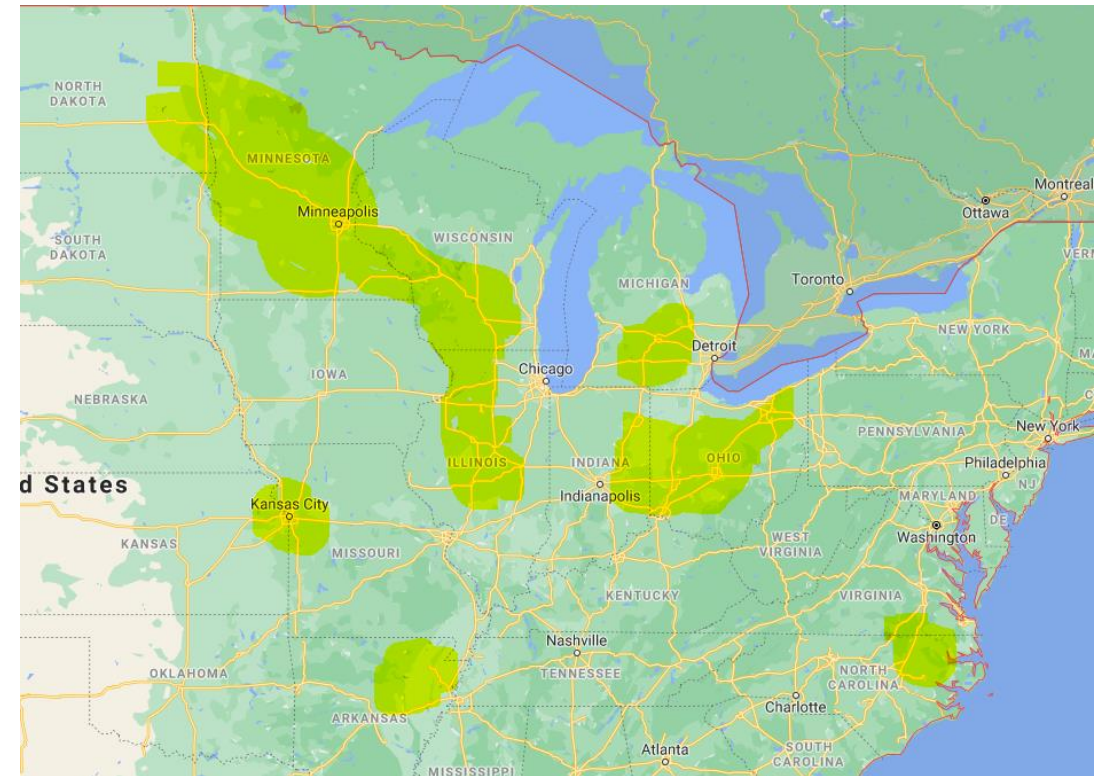
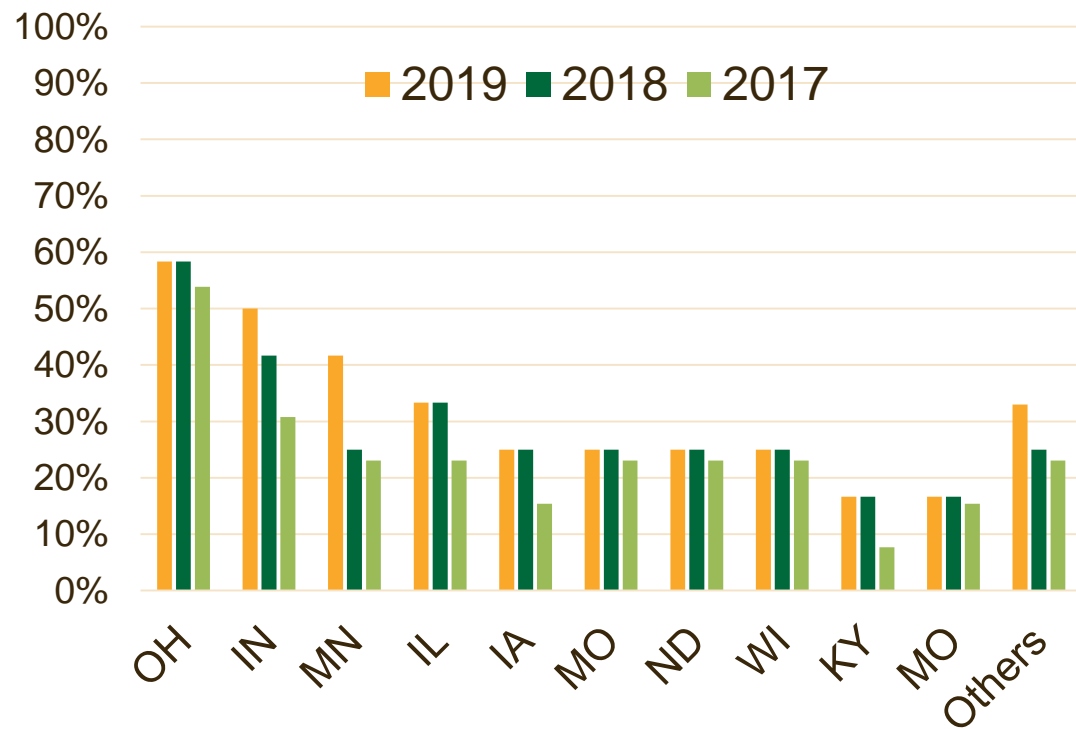
Estimate of Non-GMO Food-grade Soybean Acres Used for Indicated End-Purposes

	U.S. Soybean Acres (Millions)	% of All Soybean Acres	% of Food-grade Soybean Acres
All Soybeans	83.8	100.0%	-
Food-grade Soybeans	2.59	3.1%	100.0%
Tofu	1.29	1.5%	49.7%
Soymilk	0.50	0.6%	19.1%
Natto	0.38	0.5%	14.6%
Miso	0.25	0.3%	9.8%
Other	0.17	0.2%	6.6%

Number of Contracted Non-GMO Food-grade Soybeans by State

Food-grade Soybean Acres (Thousands) Contracted by State			
	2019	2020	2021
Minnesota	458.7	468.1	381.1
North Dakota	354.5	378.9	294.5
Illinois	187.7	334.4	173.2
Michigan	208.5	222.9	173.2
Iowa	208.5	222.9	173.2
Ohio	166.8	178.3	225.2
Wisconsin	125.1	133.7	103.9
Indiana	208.5	89.2	69.3
Other States	62.6	66.9	52.0
North Carolina	62.6	66.9	52.0
Virginia	41.7	44.6	34.6
Total Contracted Acres	2085.1	2206.8	1732.4

U.S. Soy Food Beans Production Areas





Non-GMO Growers



101 Non-GMO Growers

- Quantify the total number of non-GMO IP food-grade soybean acres in the U.S. in the years from 2019 to 2021.
- Determine portion of non-GMO soybean acres that are food-grade versus feed-grade and changes in non-GMO food-grade soybean production.
- Compare GMO and non-GMO yields
- Assess premiums for IP food-grade soybeans, IP feed grade soybeans, organic soybeans and non-GMO soybeans that are not IP.
- Determine to whom growers market non-GMO food-grade soybeans.
- Future planting intentions.



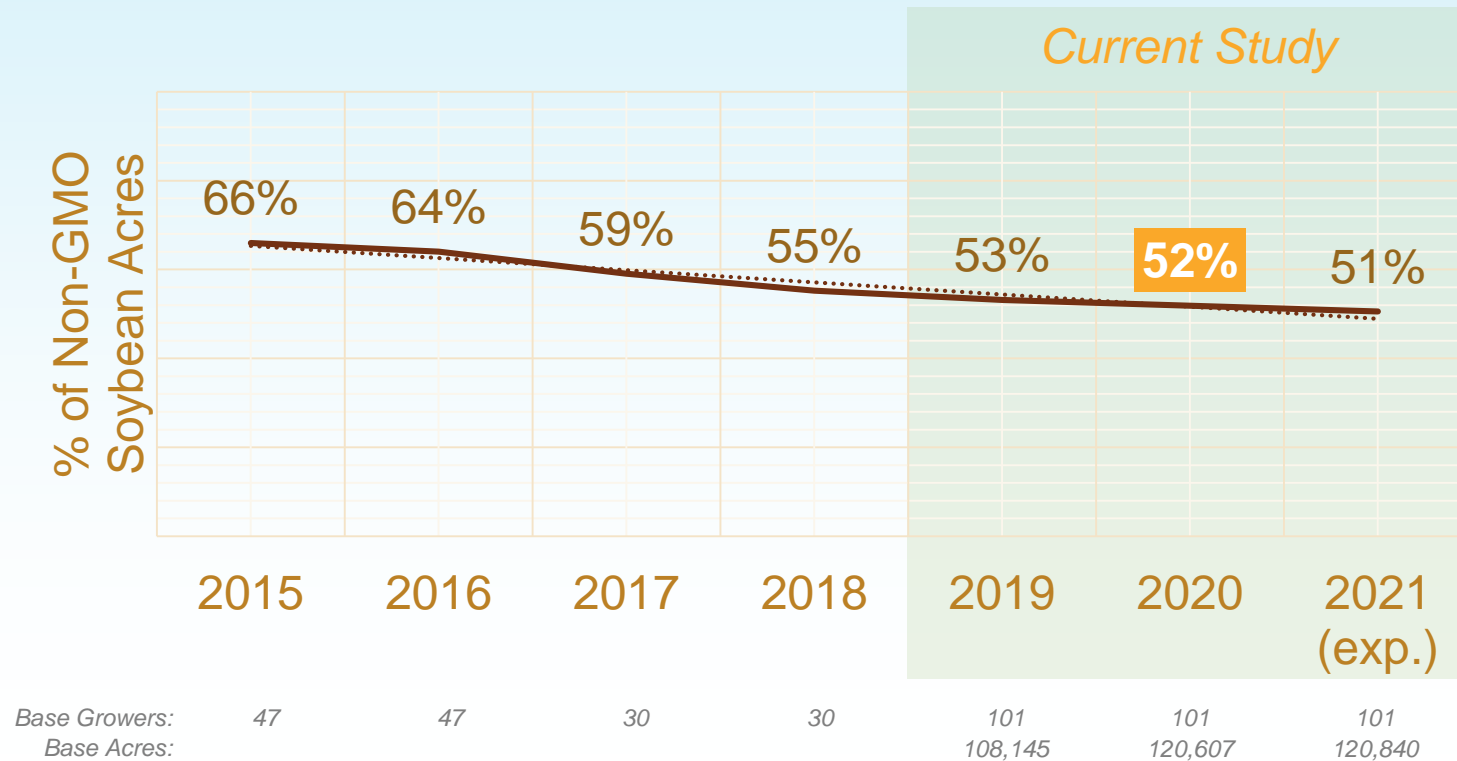
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Non-GMO Growers Food-grade & Feed-grade Acres



% Of Non-GMO Soybeans That Are Food-grade Soybeans

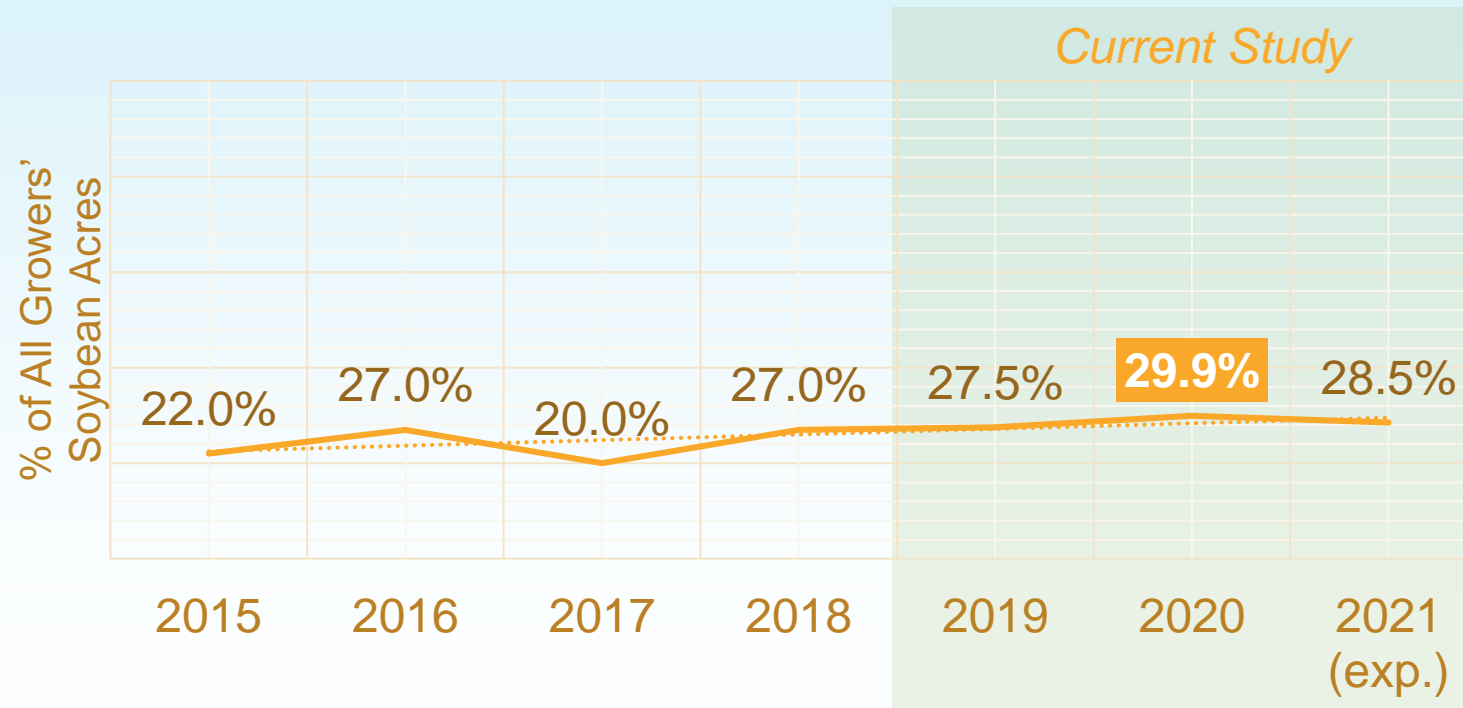
- 5.1% annual decline on average between 2016 and 2018.
- 2.5% average decline per year after 2018.
- Currently just over half of all non-GMO acres are food-grade (52%).



Source (2020 study): Of your total non-GMO soybeans, what percent are the following types [food-grade]? For 2021, please state the percent you expect to be used for the following purposes. If unsure, please provide your best estimate.

Non-GMO Growers' Feed-grade Acres by Year

- Feed-grade acres increasing by an average of 4.8% each year.
- Non-GMO feed-grade acres are currently peaked at 30% of non-GMO growers' total soybean.



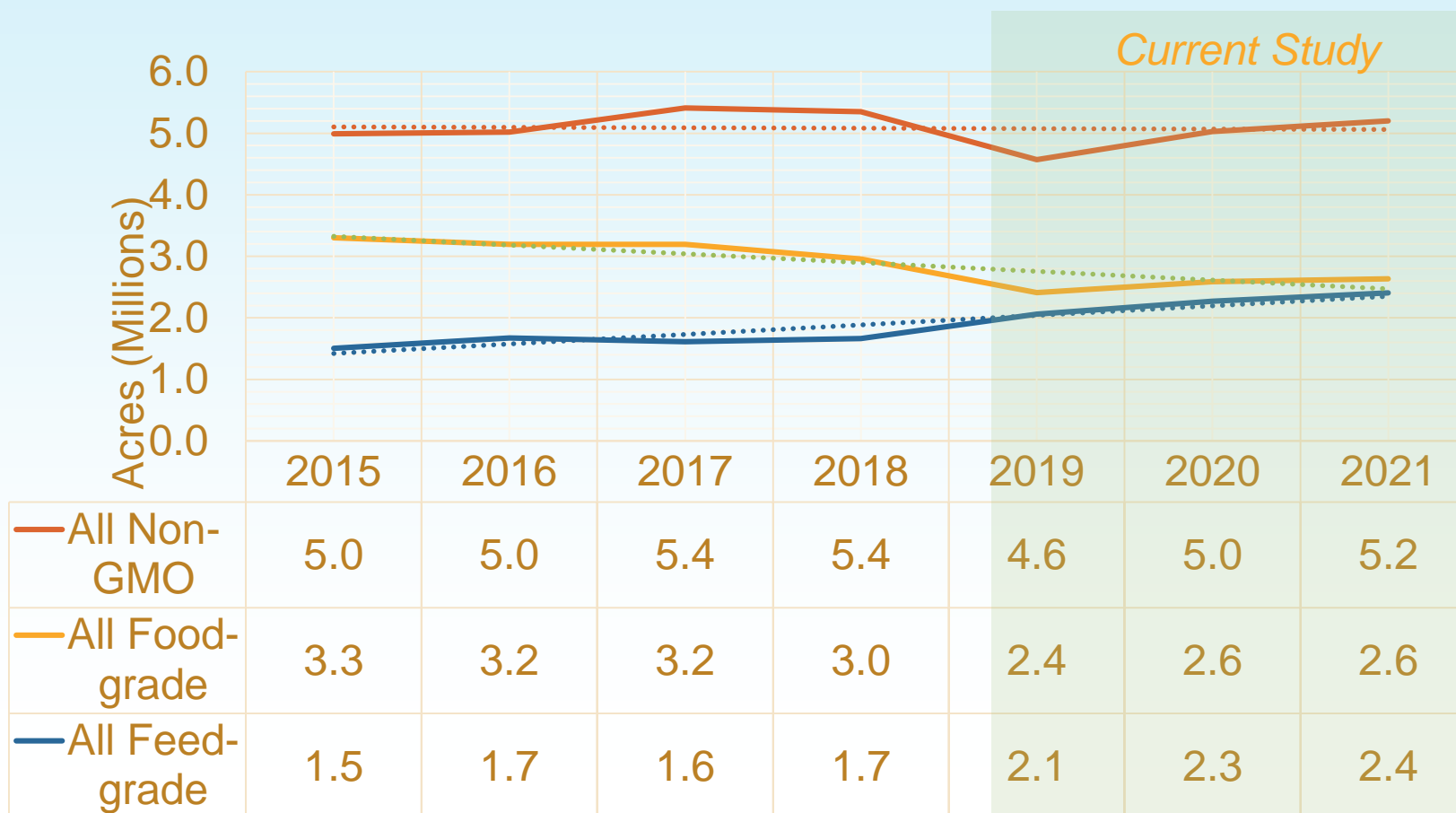
Base Growers:	83	82	102	102	101	101	101
Base Acres:	-	-	-	-	108,145	120,607	120,840

Source (2020 study): Of your total non-GMO soybeans, what percent are the following types [feed-grade]? For 2021, please state the percent you expect to be used for the following purposes. If unsure, please provide your best estimate.

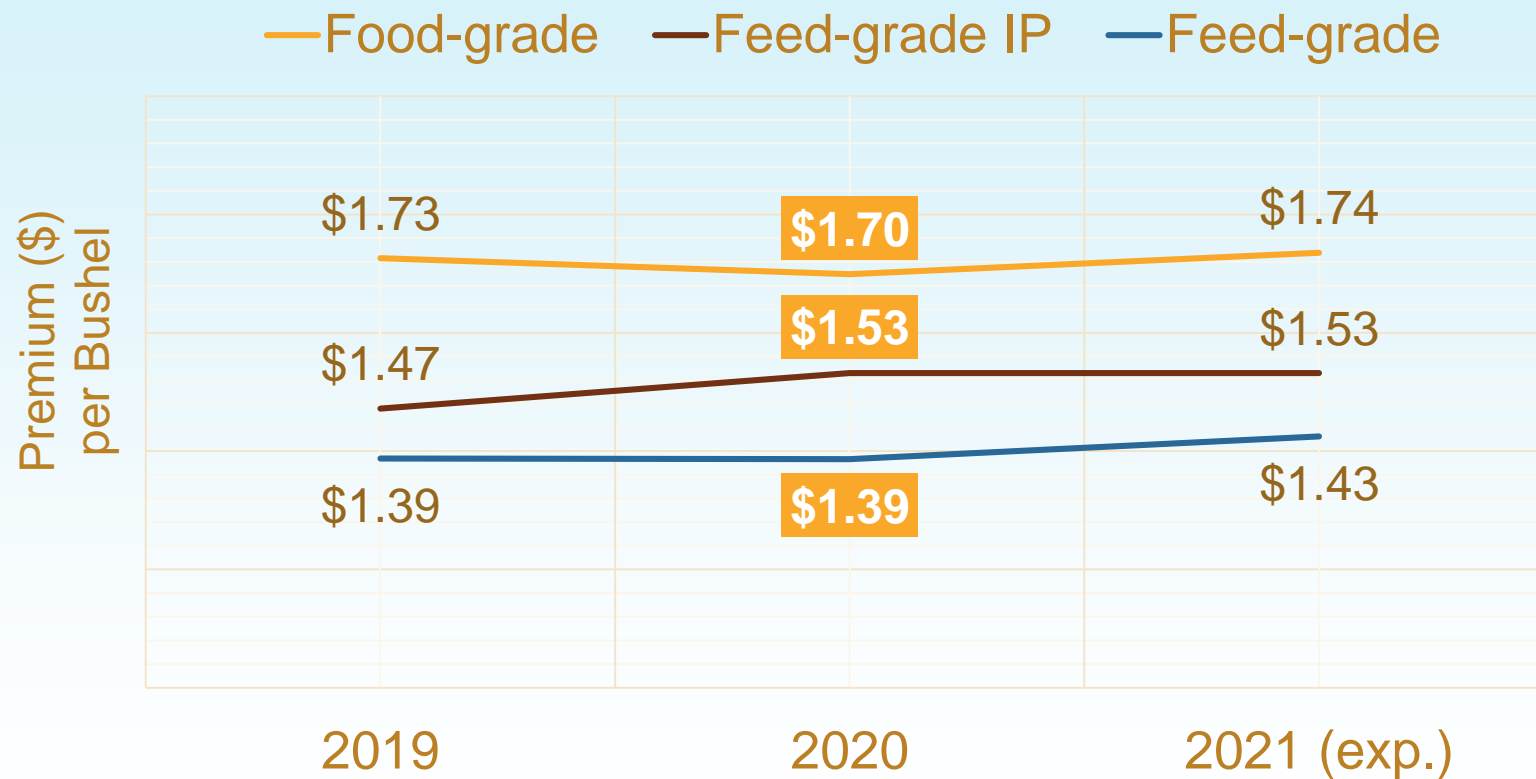
*In prior studies the question was not asked specifically about feed-grade acres, rather non-GMO acres that were not food-grade are assumed to be feed-grade.

Estimate of Non-GMO Soybean Acres in the U.S.

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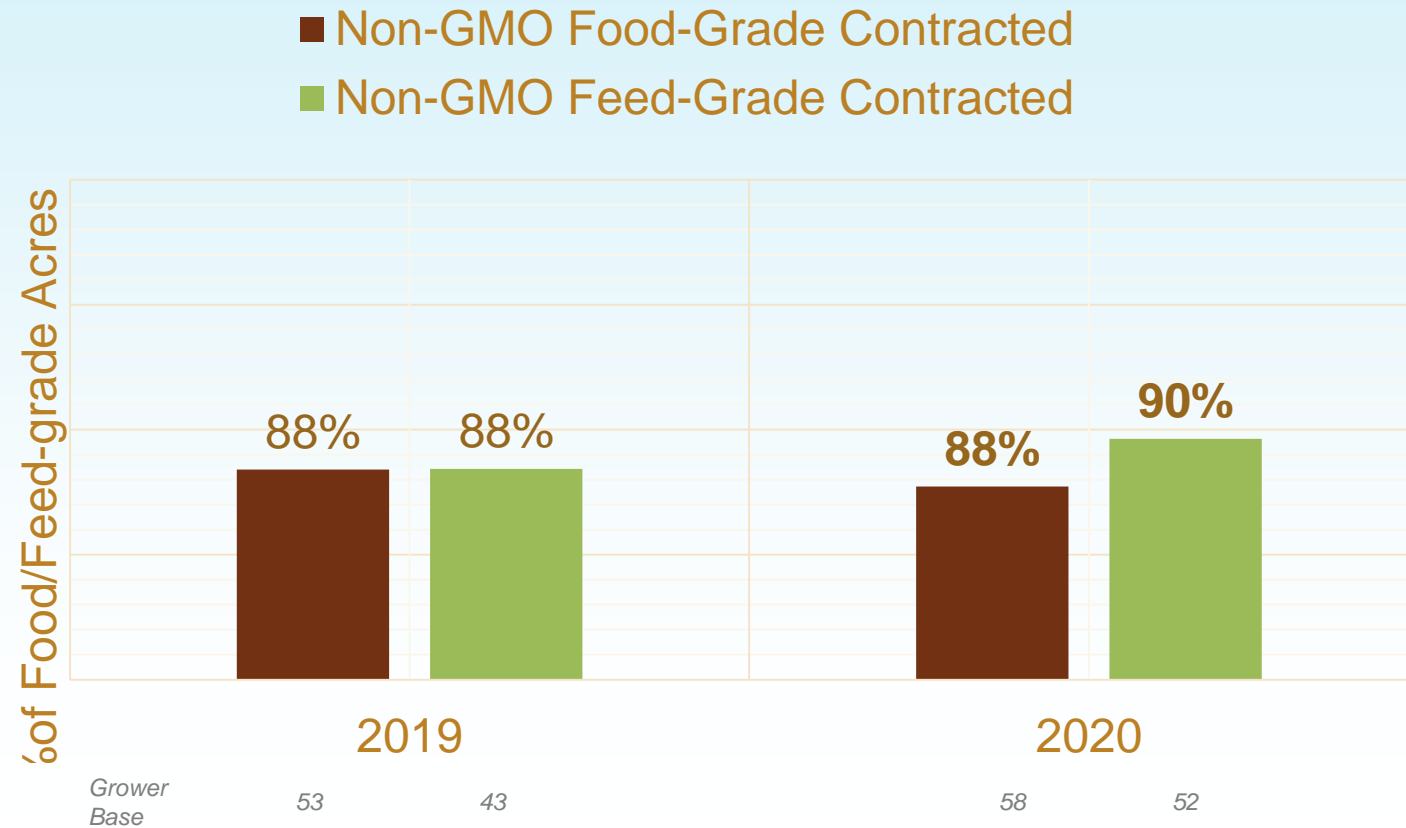
Non-GMO Soybean Premiums



	2019	2020	2021
Base Growers (Food)	38	45	38
Base Growers (Feed)	25	28	22

Source (2020 study): What premium did you/do you expect to receive for the following types of non-GMO soybeans in the following years? For 2020 and 2021, please give your expected premium. Food-grade non-GMO soybeans? Feed-grade non-GMO soybeans that are identity preserved? Feed-grade non-GMO soybeans that are not identity preserved? Organic soybeans?

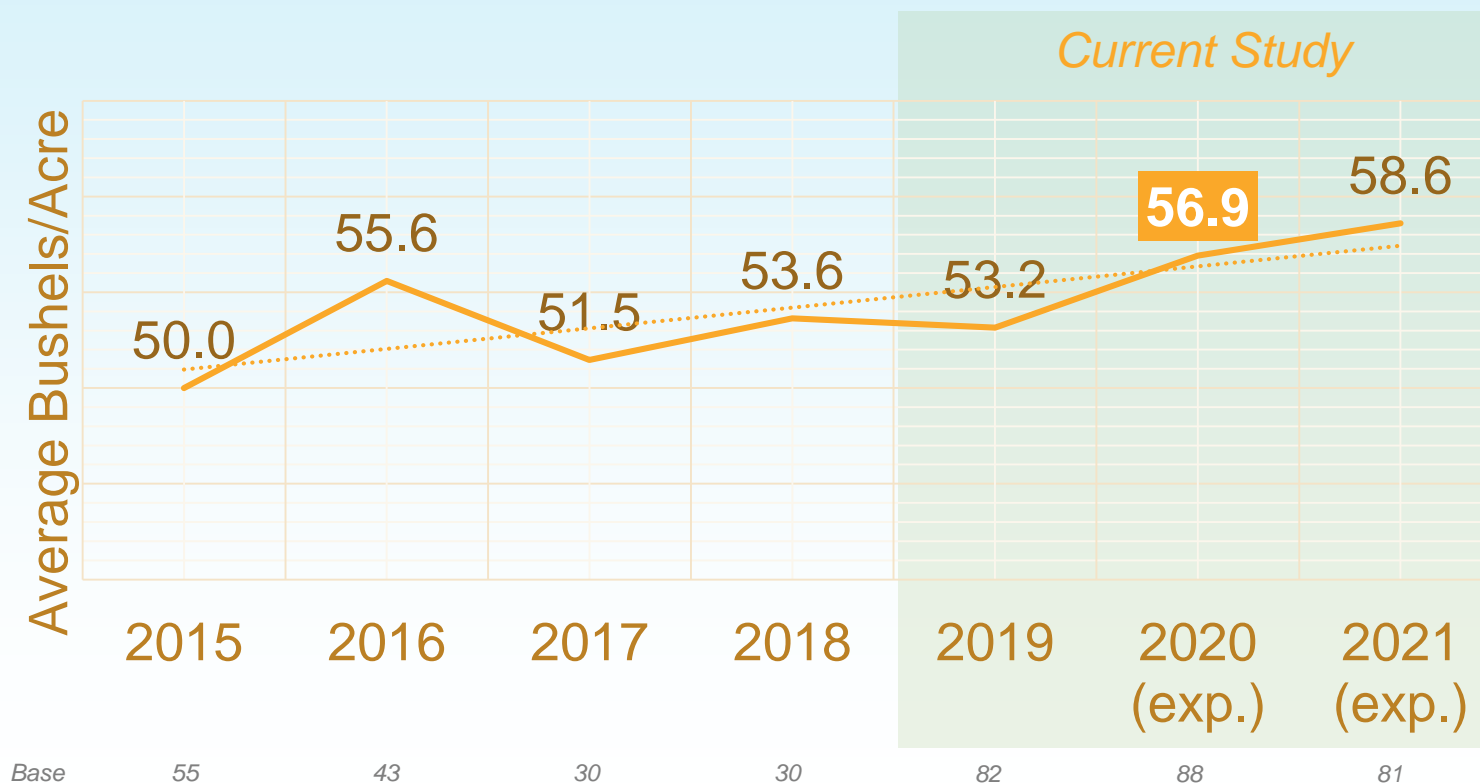
- Most non-GMO acres, both food and feed-grade are produced under contract.



Source (2020 study): What percent of food-grade non-GMO is produced under contract? What percent of feed-grade non-GMO is produced under contract?

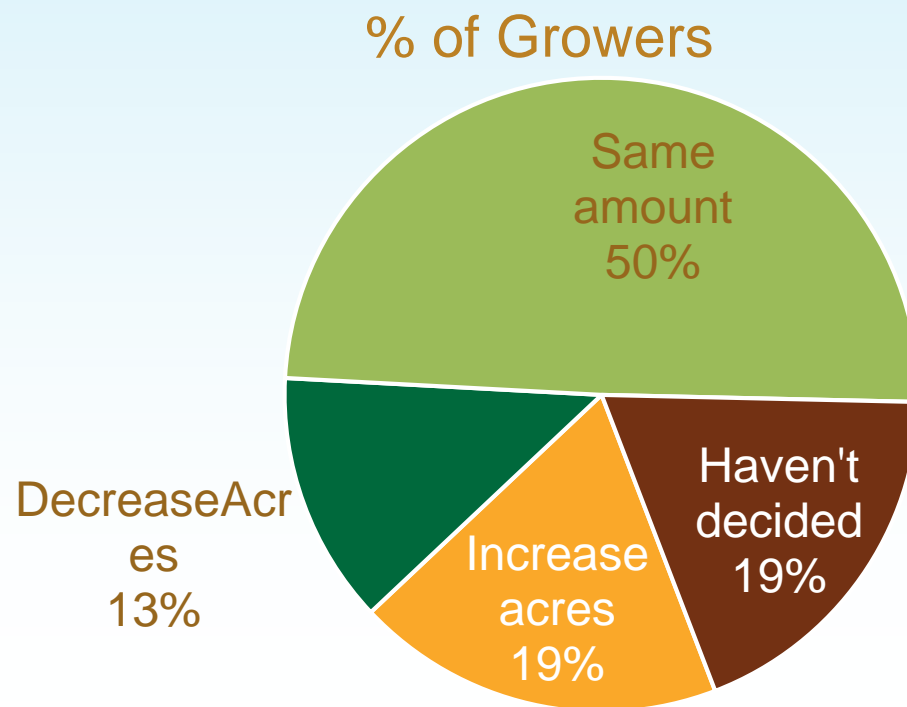
Non-GMO Soybean Yields Trends

- Non-GMO soybean yields have increased by about 2.8% annually since 2015.



Source (2020 study): What were your yields for the following types of soybeans in the following years [GMO yields, Non-GMO yields]? For 2020 and 2021, please give your expected yields.

- More growers report they will increase rather than decrease their non-GMO food-grade soybean acres (19% vs. 13%).



Base Growers –

Source (2020 study): Based on your current premium, are you likely to increase, decrease or plant the same amount of non-GMO food-grade acres in the next year?



Non-GMO Exporters, Purchasers, Contractors

22 Exporters



- Determine how food-grade soybeans are acquired (i.e., via contract or spot-purchase) and what portion is acquired using each method.
- Estimate of the number of non-GMO food-grade soybean acres in the U.S. that fall into end-use purpose categories such as soymilk, tofu, natto, miso and others.
- Determine from which states exporters buy non-GMO food-grade soybeans.
- Determine the countries to which U.S. non-GMO food-grade soybeans are exported and the quantity exported to each country.



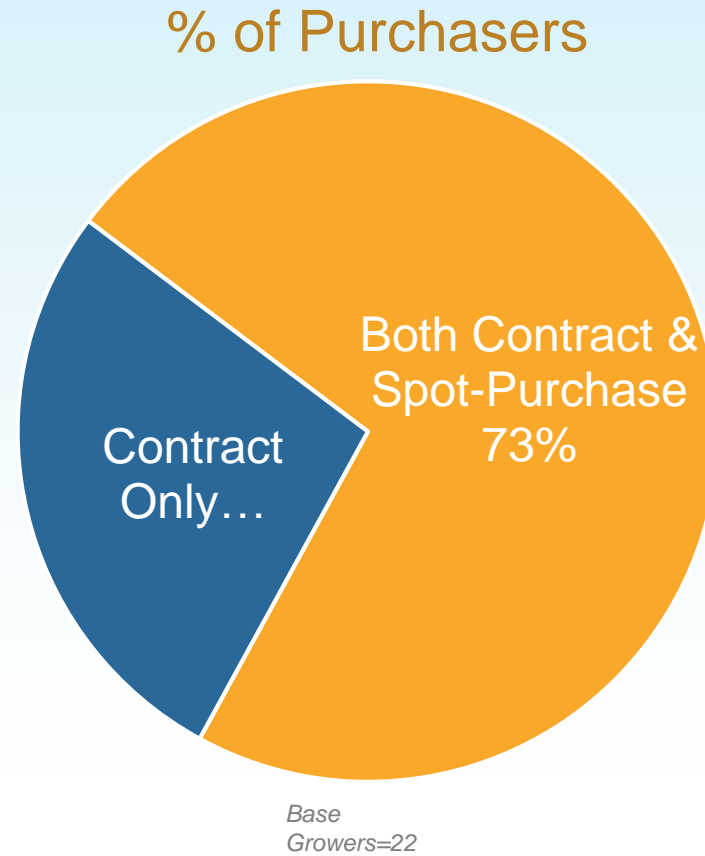
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Purchasers/Export ers Soybean Purchase Behavior



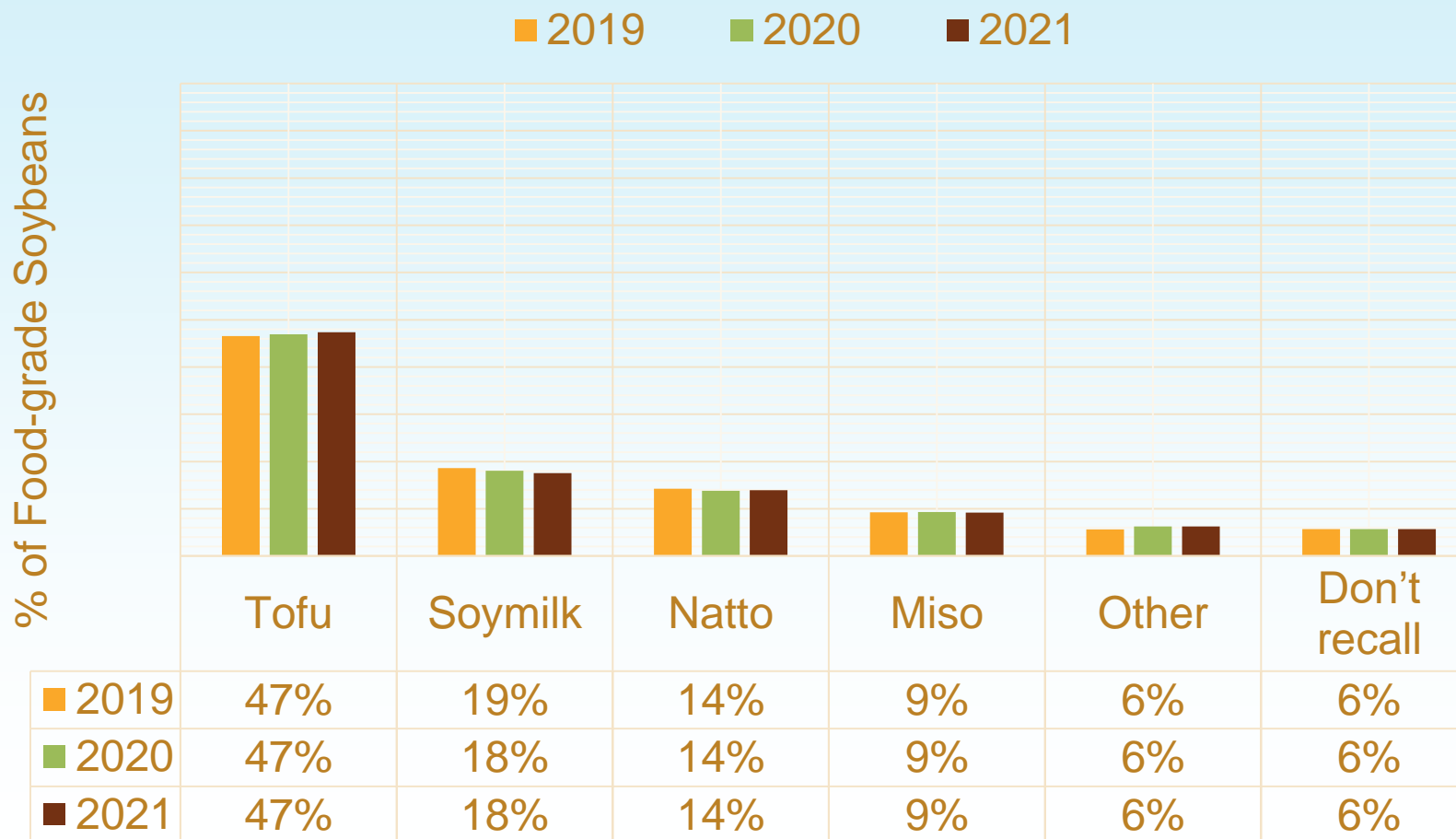
How Non-GMO Exporters Acquire Soybeans

- All exporters contract soybeans, with most using both contracts and cash purchases.



Source (2020 study): Which of the following methods does your company use to acquire soybeans? Please include all soybeans acquired by your company, including GMO, Non-GMO, etc. Of all the soybeans acquired by your company, what percent will be acquired using the following methods in the following years? When you use contracts to acquire soybeans, are you contracting for a specified number of guaranteed soybean acres or a specified number of bushels of soybeans.

End-Purpose for Non-GMO Food-grade Soybeans



Bases: 2019=21, 2020=21,
2021=21.

Source (2020 study): Of the IP NON-GMO FOOD-GRADE SOYBEAN purchased by your company in the following years, what percentage are used for the following end-purposes?



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Purchasers/ Exporters Non-GMO Soybean Exports



% of Non-GMO Food-grade Soybeans Exported to Indicated Countries

	2019	2020	2021
Japan	69%	68%	64%
Taiwan	7%	8%	8%
South Korea	9%	8%	9%
Thailand	6%	6%	7%
Malaysia/Singapore	2%	2%	3%
Vietnam	2%	2%	3%
The Philippines	2%	2%	2%
China	1%	2%	2%
Indonesia	1%	1%	1%
EU	<1%	1%	1%
Other Countries	<1%	<1%	<1%

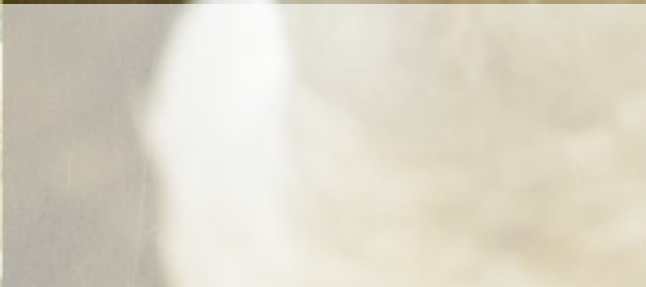
Base:

21

21

21

Source (2020 study): And what percent of the IP NON-GMO FOOD-GRADE SOYBEANS were/will be exported to the following countries in the following years?



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